

B.M.A. College, Baheri, Darbhanga

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Dept. of Zoology

Subject - Biology

Class - XI

Topic - Digestion and Absorption

Topic → Digestion and Assimilation

Protein Energy Malnutrition (PEM)

Marasmus

- ① below 1 year age
- ② P + C + F x
- ③ Protein + Energy deficiency
- ④ Severe Emaciation
- ⑤ No sub Cutaneous fat (below skin)
- ⑥ odema absent
- Pat belly present
- Dry and wrinkle skin

Kwashiorkor

- ① About 1-5 years
- ② P x C + F ✓
- ③ protein deficiency
- ④ washing of muscles
- ⑤ sub Cutaneous fat present
- ⑥ odema absent
- pat belly present
- Normal skin

Vitamin's

Vitamin-A (Retinol) → Night blindness
 → Kerophthalmia

Vitamin-D (Calciferol) → Rickets (children)
 → Osteomalacia (Adult)
 → acts as a hormone

Vitamin-E (Tocopherol) - Antisterility Vitamin

Vitamin-K [Naphthoquinone
 or
 Menadione
 or
 phylloquinone] → Antihaemorrhage
 [Help in synthesis of
 prothrombin]

Water soluble : →

Vitamin B₁ (Thiamine) - Beriberi

Digestion and absorption

Vitamin B₂ (Riboflavin) - cheilosis

(B₂ is also known as yellow - Enzyme)

Vitamin B₃ (Niacin) - Pellagra
(pellagra preventing syndrome)



Four disease syndrome

- Dermititis
- Dementia
- Diarrhoe
- Death

Vitamin B₅ (pantothenic acid) - Burning Foot syndrome

Vitamin B₆ (Pyridocine)

Vitamin B₇ (Biotin)

↓
vit H

Vitamin B₉ (Cyanocobalamin) - Pernicious anemia

Vitamin C (Ascorbic Acid) - Help in synthesis of collagen fibers.
~~and~~ scurvy

Vitamin B₁₇ (laetrile) ⇒ Anti Cancer

Deficiency of Fe - microcytic anaemia

Deficiency of I - simple goitre

Deficiency of F - fluorosis

Calorific value and physiological value

C	4.2 Kcal/gm	4 Kcal/gm
P	5.65 Kcal/gm	4 Kcal/gm
F	9.45 Kcal/gm	9 Kcal/gm

Ruminating stomach - Animal order Artiodactyla
(Ruminococcus fatty acid)

- ↓
- Rumen
- Reticulum
- Omasum
- Abomasum (true stomach)

cellulose

- Horse
- Donkey
- Zebra

⇒ Calcium in site of cellulose - digestion